DETAILED ACTION

Claims 1-19 are pending in the application.

This Office Action is in response to the Amendment filed on 3/21/2011.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7, 8, 10, 11, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Saccani et al (Molecular Cell, 2003. Vol.11, pages 1563-1574). **This rejection has been withdrawn in view of granting the priority date with the filing date of 60/508,349.**

Claims 7, 8, 10, 11, 13 and 14 are rejected under 35 U.S.C. 102(a) as being anticipated by Saccani et al (Molecular Cell, 2003. Vol.11, pages 1563-1574).

Saccani et al. disclose a method that comprise the following steps: providing an isolated nucleotide sequence comprising SEQ ID NO: 57 that specifically binds to RelB Rel homology domain comprising SEQ ID NO: 62 (the ELC and MDC promoters comprises SEQ ID NO: 57), a polypeptide comprising RelB RHD (RelB comprises RelB RHD), and a compound (Ad IkBαSR); contacting the nucleotide sequence with said polypeptide in the presence of said compound, detecting altered specific binding of said nucleotide sequence with said polypeptide (see pages 1568, bridging paragraph, and Figure 4 and legend). Saccani et al. further disclose that detecting binding of said nucleotide sequence to p65/RelA, and detecting binding of the

polypeptide comprising RelB RHD to consensus κB sequence, SEQ ID NO: 58 (see Figure 3 and legend, page 1567-1568, bridging paragraph). Saccani et al. also disclose that ELC is selectively activated by p52-RelB hetero-dimer (see page 1568, 1st col., 3rd paragraph, last 3 lines), it would have been inherent that the polypeptide DNA complex detected comprises said hetero-dimer. Although Saccani et al. do not teach the sequence of SEQ ID NOL 57, it is inherent that the promoter of ELC comprises said sequence because it specifically binds the RelB. Therefore, Saccani et al. disclose the instantly claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sacanni et al., in view of Toledano et al (PNAS, 1991. Vol. 88, pages 4328-4332).

The teaching of Sacanni et al. has been discussed above. However, Sacanni et al. do not teach contacting the polypeptide and the nucleotide sequence *in vitro*.

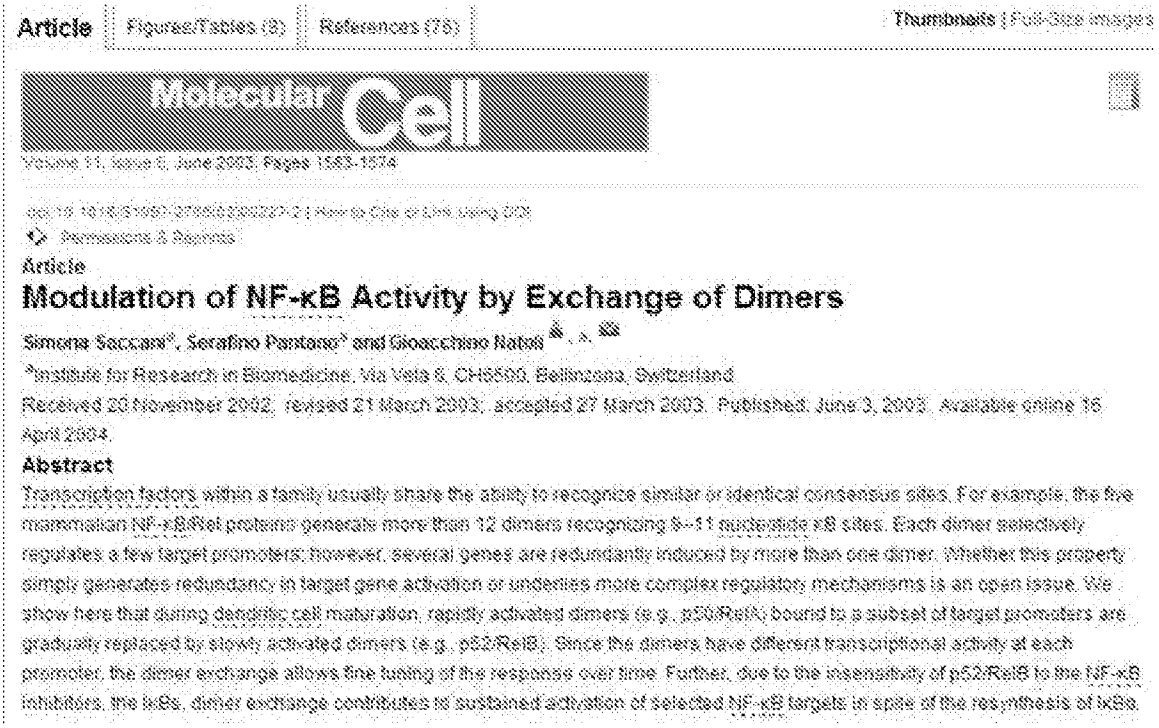
Toledano et al. teach method of detecting nucleotide and transcription factor binding complex *in vitro*. Toledano et al. teach modulating NF-κB binding activity *in vitro* by oxidation and reduction (see abstract). Toledano et al. demonstrated DNA and the NF-κB binding activity was detected by EMSA using germ translation product and the IgκB probe (see page 4330, 1st col).

It would have been obvious to an ordinary skill in the art that the binding of RelB-p52 dimer to nucleotide comprising the ELC promoter sequence as demonstrated by Sacanni et al. can also be detected to *in vitro* method as taught by Toledano et al. Methods of detecting DNA protein interaction between a transcription factor such as RelB-p52 and a promoter sequence *in vitro* are well known in the art as evidenced by the teaching of Toledano et al. The ordinary skill in the art would have used purified dimer and the promoter sequence to study the interaction in an *in vitro* setting to confirm the binding of the dimer to the specific sequence within the promoter. Combining prior art known methods to achieve a predictable result would have been within the capability of an ordinary artisan. Therefore, the claimed invention would have been *prima facie* obvious to an ordinary skill in the art at the time the invention was made.

Response to Arguments

Applicants have provided a 1.131 declaration to establish that the claimed invention was conceived and reduced to practice prior to the date of July 3rd, 2003. The declaration has been fully considered. However, the declaration under 37 CFR 1.131 filed on 3/21/2011 is

insufficient to overcome the rejection of claims 7-14 based upon 102 (a) and 103 (a) as set forth in the last Office action because the date the invention was made established by the declaration is later than the publication of the Sacanni reference (see image below). Therefore, Sacanni et al. is still qualified as prior art under 102 (a) and 103(a) as set forth above.



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Article

Modulation of NF-κB Activity by Exchange of Dimers

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Abstract

Transcription factors within a family usually share the ability to recognize similar or identical consensus sites. For example, the five mammalian NF-κB/Rel proteins generate more than 12 dimers recognizing 9–11 nucleotide κB sites. Each dimer selectively regulates a few target promoters; however, several genes are redundantly induced by more than one dimer. Whether this property simply generates redundancy in target gene activation or underlies more complex regulatory mechanisms is an open issue. We show here that during dendritic cell maturation, rapidly activated dimers (e.g., p50/RelA) bound to a subset of target promoters are gradually replaced by slowly activated dimers (e.g., p52/RelB). Since the dimers have different transcriptional activity at each promoter, the dimer exchange allows fine tuning of the response over time. Further, due to the insensitivity of p52/RelB to the NF-κB inhibitors, the IκBs, dimer exchange contributes to sustained activation of selected NF-κB targets in spite of the resynthesis of IκBs.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 13 and 14, it is unclear what the recited further step accomplishes in the context of identifying one or more test compounds that alters the binding of RelB Rel homology domain with RelB kappaB sequence.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CELINE QIAN whose telephone number is (571)272-0777. The examiner can normally be reached on 9:30-5:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marchel can be reached on 571-272-2911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Celine X Qian /
Primary Examiner, Art Unit 1636